Technical Report #5-20528
Contract Number DAAH01-98-D-R001
Delivery Order No. 40

(U) Javelin Simulation lethality Development (5-20528)

Final Technical Report

February 2000

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Prepared for
Aeroballistics Analysis Functional Area
Research, Development, and Engineering Center
U.S. Army Aviation & Missile Command
Redstone Arsenal, Alabama 35898
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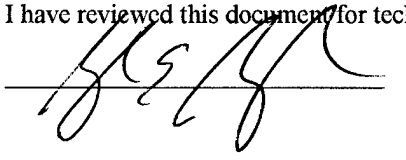
I have reviewed this document for technical and security purposes and find it acceptable.



REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	February, 2000	Final , 2/26/99 - 9/30/99

4. TITLE AND SUBTITLE
Javelin Simulation Lethality Development

5. FUNDING NUMBERS

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
The University of Alabama in Huntsville, Research Institute
301 Sparkman Drive, RI E-47
Huntsville, Alabama, 35899

8. PERFORMING ORGANIZATION REPORT NUMBER
5-20528

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Aviation & Missile Command
AMSAM-RD-SS-AA
Commander, AMCOM
AMSAM-RD-SS-AA
Redstone Arsenal, AL 35898

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Unclassified/Unlimited

12b. DISTRIBUTION CODE
A

13. ABSTRACT *(Maximum 200 Words)*

This report covers the work done by UAH during the period 2/26/99 - 9/30/99. However, all classified charts and analysis created for the COTR have been brought into their accountability system and are not discussed in this report.

14. SUBJECT TERMS
Lethality, Visualization, Simulation

15. NUMBER OF PAGES
7

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

REQUEST FOR TECHNICAL PUBLICATIONS SERVICES
PART I

(To be completed by originator when draft is submitted for editing and typing)

Title of Document: Javelin Simulation Lethality Development

Author(s)/POC: Glenn E. Romanczuk Phone: (205) 890-6955 x. 252

Type of Document (check): Technical Report (X) Special Report ( )

Management Brief ( ) Other ( )

Security Classification: Unclassified PBC No.

DA Project No.: DAAH01-98-D-R001 DO40 AMCMS Code No.

Distribution Code (See reverse side for definition of codes)

A (X) C ( ) E ( )

B ( ) D ( ) F ( )

This manuscript can (X) or cannot ( ) be contracted for editing and final preparation. If cannot, give reason:

The contents of this draft manuscript have been reviewed and approved for technical accuracy and security classification. If classified, the security classification markings on the manuscript accurately reflect the classification of the information contained herein, as specified in

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(To be completed when document is returned to originator for final review)

Report No. Date of Report

The reproducible manuscript is approved for printing and distributing.

Director/Chief Date

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US ARMY MISSILE RESEARCH, DEVELOPMENT AND ENGINEERING LABORATORY
US ARMY MISSILE COMMAND

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PART 1

TITLE OF MATERIAL

Javelin Simulation
Lethality Development

AUTHOR(S) Glenn E. Romanczuk, et. al.

ORGANIZATIONAL ELEMENT University of Alabama in Huntsville

(X) TECHNICAL REPORT 5-20528
(REPORT NUMBER)

( ) OPEN LITERATURE _____
(TITLE OF JOURNAL)

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PREFACE

(U) This technical report was prepared by the staff of the Visualization & Simulation Laboratory of the Research Institute, The University of Alabama in Huntsville. It documents the research performed under contract number DAAH01-98-D-R001, delivery Order 0040. Mr. Glenn E. Romanczuk served as the Principal Investigator Ms. Kim Williams of the MICOM Aeroballistics Analysis functional area provided the technical coordination..

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Prepared for:

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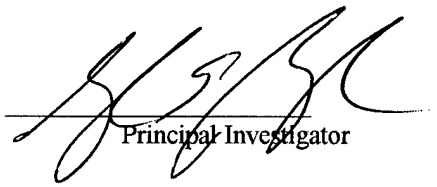

Principal Investigator

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Introduction

This contract with the U.S. Army Aviation & Missile Command and the Research Institute of the University of Alabama in Huntsville covered the specific items and engineering services which are presented in the scope of work section of this report.

The UAH reference number for this work is Account number 5-20528 and is entitled Javelin Simulation Lethality Development The period of performance was 2/26/99 to 9/30/99.

Scope of Work

The following items are listed in the scope of work for this task order contract with the U.S. Army Missile Command.

1. Provide statistical analysis of the DFS.
2. Support Live Fire Test Program.
3. Support LITE fielding
4. Investigate other methodologies.

Results

The results of this work that are unclassified will be covered in this document. The classified results have been delivered to the customer and stored on branch classified computers and Army safes.

IRPK

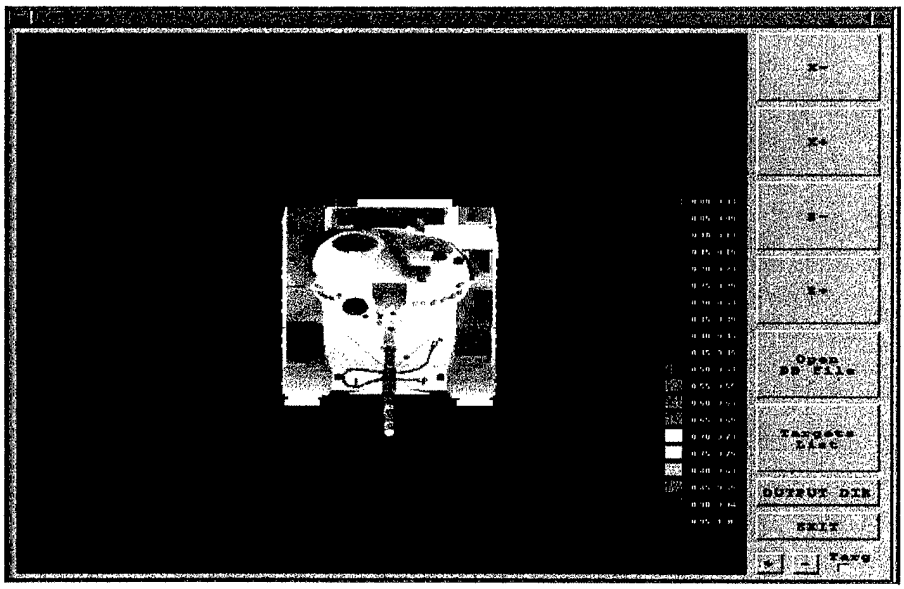

Figure 1. A Sample National Image with several impact points

This tool allows for the merging of sensor data which can be rendered with simulation data. This can be very valuable for analyzing any time dependent effects that could cause overall lethality to decrease at the moment of impact but be above requirements for the main part of the terminal approach. Figure 1 shows a sample type plot showing random color simulation impacts overlayed on a sensor image.

Covered Targets

This tool was developed to explore the ability of targets to hide under low hanging structures and the geometrical features which limit or enhance the ability of smart weapons to target and kill armor that may possess this type of obscuration.. The tool allows for the user to explore many variable and see the result. Indicators show the center of the turret ring and the center of presented area. Other variables can be set and this tool could take each impact point and compare penetration available with the Pk as labeled by lead agencies. Figure 2 shows one view of the tool.

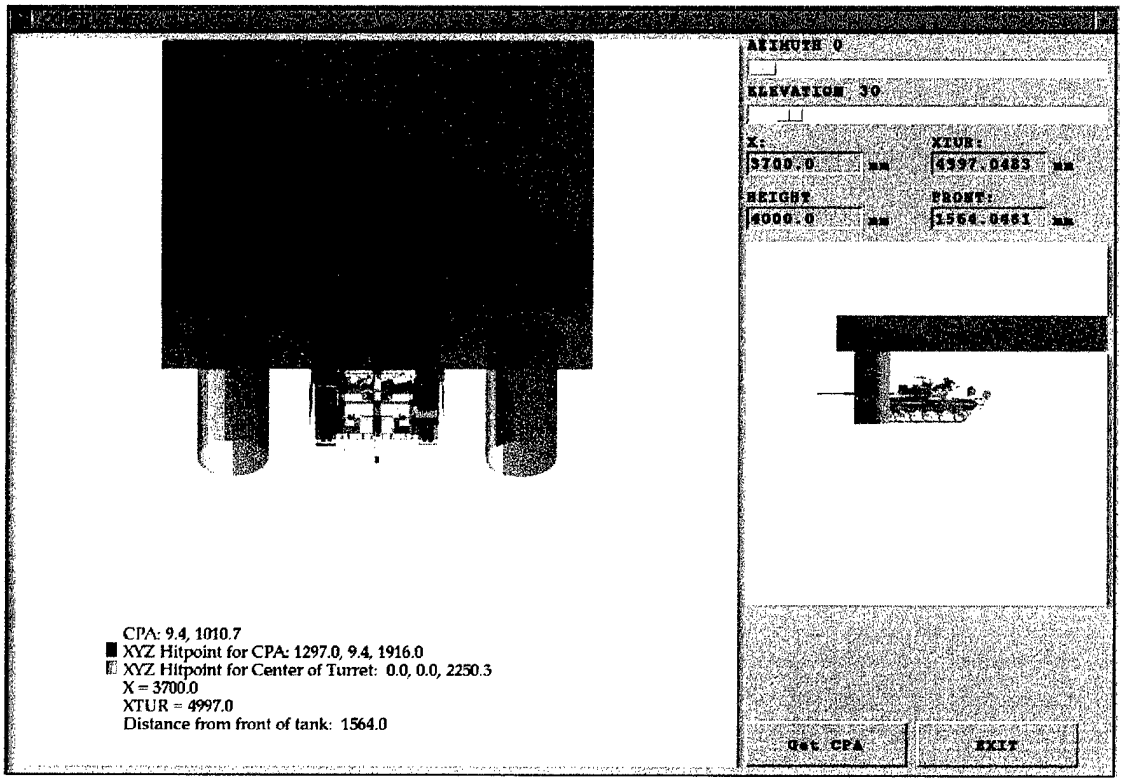

Figure 2 - The tool for exploring armor

Conclusions

This report documents the efforts under this task. All data is in the possession of the COTR for the respective tasks. A large amount of the analysis and the tools utilized to do this effort would be classified when associated with the project and any warhead specifics. However, the tools and the types of analysis tools presented here allow Project Office decision-makers to review and understand data calculated through official channels